3.7 TRANSPORTATION

This section describes existing conditions and potential impacts related to vessel transportation in the offshore study area and ground transportation in the onshore study area. The offshore transportation study area includes vessel transportation routes in the general vicinity of the 4H shell mound sites and the likely barge transport routes to the LA-2 ocean disposal site or potential dredged material off-loading facilities at the Port of Long Beach (POLB). The onshore transportation study area includes likely ground transportation routes from the POLB off-loading sites to upland dredged material and caisson debris disposal or recycle sites.

3.7.1 Environmental Setting

This section describes existing conditions in the offshore and onshore transportation study areas. The vessel transportation section addresses relevant harbors and ports, shipping activity in the coastwise shipping traffic lanes, and other vessel transportation activities in the offshore study area. Recreational boating is addressed separately in Section 3.6. The ground transportation section addresses roadways in the onshore study area.

3.7.1.1 Vessel Transportation

Santa Barbara Channel is a heavily traveled vessel transportation corridor. Most California coastwise vessel traffic passes through the Santa Barbara Channel en route to major ports on the U.S. west coast. Exceptions are super tankers, which for safety reasons generally avoid the channel by traveling south of the Channel Islands. Vessel transportation in the channel includes many types of vessels, including tankers, container ships, bulk carriers, military vessels, research vessels, cruise ships, tugs and tows, commercial fishing boats, and other commercial vessels.

Between San Francisco Bay and the Port of Los Angeles (POLA) and POLB, large vessels make an estimated 4,000 coastal transits per year (approximately 11 per day). About 20 percent of these transits are crude oil tankers. Most of the remainder is large commercial vessels greater than 300 gross tons, including container ships and bulk carriers (USCG and NOAA 1998).

Coastwise Shipping Lanes

Designated coastwise shipping lanes traverse the California coast from near Point Arguello, in western Santa Barbara County, through Santa Barbara Channel and continuing southeast to the Ports of Los Angeles and Long Beach. Oil tankers, container ships, and other large commercial vessels use these shipping lanes. In the vicinity of the 4H shell mounds, the shipping lanes are 14 to 15 nautical miles (nm) offshore, as shown in Figure 3.7-1. The shell mounds are 1.5 to 2.6 nm offshore and are therefore 11.7 to 13.5 nm from the shipping lanes, as indicated in Table 3.7-1.

Table 3.7-1. Distances to Harbors, Ports, Traffic Lanes, and Shore

Former Platform Site	*Distance to Santa Barbara Harbor (nm)*	*Distance to Ventura Harbor (nm)*	*Distance to Channel Islands Harbor (nm)*	*Distance to Port of Hueneme (nm)*	*Distance to Port of Long Beach (nm)*	*Distance to Coastwise Traffic Lanes (nm)*	*Distance to Shore (nm)*
Hilda	4.5	18.5	22.3	23.3	92.7	13.5	1.5
Hazel	6.0	17.0	20.9	21.9	91.2	13.4	1.5
Hope	8.4	14.3	18.0	19.0	88.5	11.7	2.6
Heidi	9.2	13.8	17.5	18.5	88.0	11.8	2.5

The coastwise shipping lanes operate in accordance with a Traffic Separation Scheme (TSS). A TSS is an internationally recognized vessel routing designation that separates opposing flows of vessel traffic into lanes approximately 1 nm wide, with a zone between lanes approximately 2 nm wide where traffic is to be avoided. Vessels are not required to use any designated TSS, but failure to use one, if available, would be a major factor for determining liability in case of a collision. TSS designations are most often found in international waters and are proposed by the U.S. Coast Guard (USCG), and must be approved by the International Maritime Organization, a part of the United Nations (Resources Agency of California 1997).

Small Boat Harbors

The nearest small boat harbors to the shell mounds are located in Santa Barbara and Ventura. Santa Barbara Harbor is 4.5 nm to 9.2 nm from the four shell mound sites and Ventura Harbor is 13.8 nm to 18.5 nm distant, as indicated in Table 3.7-1. Both harbors feature full-service marinas with fishing and diving charters, whale watching and island cruises, and public boat ramps. Ventura Harbor serves as the gateway to the Channel Islands National Park, with one or more boats departing for the Islands each day, depending on the season (CSAA 2002).

Channel Islands Harbor in the city of Oxnard is located approximately 6.8 miles southeast of Ventura Harbor and approximately 1 mile northwest of the Port of Hueneme. Channel Islands Harbor provides charter boat service for the offshore oil industry, transport to the Channel Islands, dock space for sport and commercial fishing, 11 marinas and yacht clubs, and a USCG Station (Stienstra 1996; Channel Islands Harbor 2002).

Deep-Water Ports

The nearest deep-water ports larger than the Port of Hueneme are the POLA and POLB, which are approximately 90 nm southeast (see Table 3.7-1). To the north the nearest port is San Francisco, which is approximately 290 nm distant.

The POLB is one of the world's busiest seaports. Located on San Pedro Bay in the city of Long Beach, the POLB comprises more than 7,600 acres of wharves, cargo terminals, roads, rail yards, and shipping channels. With numerous cargo, passenger,

Figure

3.7-1 Coastwise Shipping Traffic Lanes in the 4H Vicinity

(color fig)

color page 2

and recreational operations, it averages over 3,000 vessel arrivals per year (POLB 2002).

LA-2 Ocean Disposal Site

The nearest ocean disposal site for dredged materials is the LA-2 ocean disposal site, offshore Palos Verdes. Dredged material must first be determined appropriate for unconfined aquatic disposal, in accordance with regulations contained in 40 CFR 227.6 (see Section 3.2).

3.7.1.2 Ground Transportation

Several major local and regional roadways serve the POLB, including Ocean Boulevard, Long Beach Freeway (I-710), and Terminal Island Freeway (SR-47/103). The Terminal Island Freeway connects directly with I-110 in San Pedro immediately west of the Port. Both I-110 and I-710 provide direct access to several other interstate highways (405, 105, 10, 5, and 210) in the greater metropolitan Los Angeles area. The POLB has several intermodal rail yards, which reduce truck traffic within the POLB and facilitate flow of cargo to and from the docks. The POLB's rail lines access the Union Pacific Railroad (UPRR), which serves many locations throughout southern California and the western U.S.

The Envirocycle recycling facility, in the unincorporated community of McKittrick in southern Kern County, has been identified as a potential disposal site for the shell mounds dredged material. McKittrick is located approximately 140 miles northeast of the POLB. Regional access between metropolitan Los Angeles and Kern County is provided by Interstate 5 (I-5), which is the primary north-south artery between northern and southern California through the San Joaquin Valley. The recycling facility is located approximately 20 miles west of I-5 near McKittrick. Local access is provided from the north by State Route (SR) 58, which passes through McKittrick approximately 8 miles west of its junction with I-5. SR 33, also known as the West Side Highway, approaches the facility from the south via Taft and is accessed from I-5 by SR 119. Other recycling facilities in the southern San Joaquin Valley that have traditionally served the offshore oil industry and could also be used would be similar to the Envirocycle facility in terms of transportation from POLB.

As described in Section 2.1.3.5, dredged materials (and caisson debris) could also be disposed of in permitted landfills within the greater Los Angeles region. The capacity of individual landfills is limited, and disposal could occur at any one, or a combination of, multiple locations, subject to availability.

3.7.2 Regulatory Setting

Federal regulations addressing marine navigation are codified in 33 CFR Parts 1 through 399 and are implemented by the USCG and the U.S. Army Corps of Engineers. Federal regulations addressing marine vessel shipping are codified in 46 CFR Parts 1 through 599 and are implemented by the USCG, Maritime Administration, and Federal

Maritime Commission. California laws concerning marine navigation are codified in the Harbors and Navigation Code and are implemented by local city and county governments.

The shell mound sites are located within the Eleventh Coast Guard District, which includes all of California and offshore waters, as well as the states of Nevada, Arizona, and New Mexico. Each USCG District publishes a weekly *Local Notice to Mariners* (LNM), which is the primary means for disseminating information pertaining to navigational safety and other items of interest to mariners. Information contained in the LNM includes reports of hazards to navigation, channel conditions, obstructions, dangers, anchorages, restricted areas, regattas, construction or modification of bridges, construction or removal of oil platforms, and laying of undersea cable.

For the onshore portion of the project, federal regulations concerning motor vehicle use are contained in 49 CFR Parts 300 through 399 and 500 through 599, and are implemented by the Federal Highway Administration and National Highway Traffic Safety Administration. California laws concerning vehicular use of roadways are contained in the state's Vehicle Code and are implemented by Caltrans and the California Highway Patrol.

The Circulation Element of the Kern County General Plan (Kern County 2003a) governs circulation, infrastructure, and maintenance of roadway levels of service. The Circulation Element designates the highways that provide access to McKittrick, including I-5 and SR 58, SR 33, and SR 119, as part of the regional circulation network. I-5 is the major north-south freeway through California, Oregon and Washington. SR 58, connecting I-5 and McKittrick, carries east-west through-traffic between I-5 and SR 99, the major Central Valley connector; SR 58 is a two-lane highway throughout the project area. SR 33 is a two-lane highway between Maricopa to the northern county line; it approaches McKittrick from the south and is accessed from to I-5 via SR 119. SR 119 is a two-lane route between Taft and SR 99. I-5, SR 58, SR 33 and SR 119 are all designated as "routes of regional significance" in the Circulation Element.

The Element states that trucks constitute the majority of roadway traffic in Kern County; truck trips constitute an estimated 24 percent of all vehicle miles traveled (VMT) countywide, which is relatively higher than the state VMT average of 10 percent and VMTs reported by surrounding counties (20 percent, eight percent and 19 percent for Kings, Los Angeles and Tulare Counties, respectively) (Kern County 2003a).

The Circulation Element designates the area surrounding McKittrick as the "Taft Area" for planning purposes, and identifies the city of Taft as the area's major activity center. The primary industries in this area are petroleum exploration and production, and consequently there is relatively heavy truck traffic serving the oil fields. According to the Element, Caltrans has recommended that SR 119 be upgraded to a freeway and SR 133 be widened to four lanes between Taft and McKittrick.

Traffic counts performed in 2002 show an annual volume of 65,000 vehicles carried by I-5 at its intersection with SR 99; 8,500 vehicles on SR 33 at S4 119; 72,000 vehicles on SR 58 at SR 99; and 10,700 vehicles on SR 119 at SR 99 (Kern County 2003b).

The County has designated Level of Service (LOS) D (Approaching Unstable, with queues but without excessive delays) as the minimum acceptable standard for unincorporated areas. I-5 and SRs 58 (in the project vicinity), 33 and 119 all currently maintain LOS of C (Stable Operation with acceptable delays) or better (Kern County 2003a).

3.7.3 Significance Criteria

The significance criteria listed below are based on Appendix G of the State CEQA Guidelines. A proposed Program Alternative would have a significant impact on transportation if it resulted in:

- Disruption of marine traffic that would delay normal movements of commercial or military vessels.
- Impedance of roadway traffic flow during morning or evening peak hours on public roads currently at a LOS D or worse.

3.7.4 Impact and Mitigation Measures

This section addresses potential impacts to offshore vessel transportation and onshore ground transportation. The vessel transportation analysis addresses potential impacts on marine transportation routes in the vicinity of the 4H shell mounds. The ground transportation analysis addresses potential impacts on ground transportation routes serving proposed dredged material off-loading and upland disposal sites.

3.7.4.1 Program Alternative 1 (PA1): Shell Mounds and Caissons Removal and Disposal

Impact – Vessel Transportation

Shell mound removal would be accomplished by a 160-ft by 60-ft sealed clamshell bucket dredge with an average barge capacity of 4,500 cubic yards (cy). Dredging activity would occur on a 24-hour schedule, but average “up time” of dredge equipment is anticipated to be 15 hours per day.

Assuming an average dredging rate of 360 cy per hour, 15 hours per day, proposed operations would yield up to 5,400 cy per day of dredged material. Approximately 9 days of dredging would be required, generating about 12 barge loads of sediment to remove 45,000 cy. Assuming one additional day apiece for relocation of operations between shell mounds, project dredging would last 12 days.

Caisson demolition and removal at the former Platform Hazel site would require use of a clamshell bucket or a crane (possibly the same vessel that does the dredging), a barge

to haul away the debris, and a dive boat to support underwater workers. One barge trip would be sufficient to remove all caisson debris. Caisson removal would require approximately 4 days.

A tugboat would tow barges loaded with the dredged material and caisson debris to an off-loading site at the POLB. The tow route is expected to join the coastwise shipping lanes at a point where the lanes near the coast between Anacapa Island and Port Hueneme, and follow them to the POLB.

The dredging vessel and dive boat would fly the appropriate day shapes (brightly colored flags that vessels use to communicate with each other) to identify each vessel as to function and as a "vessel restricted in her ability to maneuver." While operating at night, the dredging vessel and dive boat would be well lighted and display the recognized light signals communicating their functions. Notification would be posted in the LNM to ensure that mariners on commercial and military vessels as well as recreational boaters would have prior notice of the dredging and diving activities.

Removal of remaining debris and final smoothing of the seafloor would be accomplished by trawling with a heavy-duty net. Debris captured in the net would be hauled to the surface and deposited on the aft deck of the trawler for subsequent disposal onshore. It is assumed that this debris would consist of relatively small volumes of concrete and metal rubble that would be off-loaded in port at the end of each day and hauled to an approved recycling facility or one or more permitted landfills by a licensed waste-disposal contractor. Trawling would systematically traverse each mound in a grid pattern until repeated passes resulted in no snags or further capture of debris. It is estimated that this final smoothing operation would require 2 to 3 days per mound, or 8 to 12 days total.

Daily boat trips would be required between the dredge sites and support services at the Port of Hueneme to rotate crews and to deliver equipment and supplies. The Port of Hueneme provides year-round support to the offshore oil industry and has adequate facilities to support the proposed dredging operation.

Dredging, seafloor smoothing, and transport of dredged materials to the POLB or LA-2 ocean disposal site are short-term activities that would not disrupt marine traffic. Therefore, PA1 would result in a less than significant impact on vessel transportation.

MITIGATION MEASURES

None proposed.

Impact – Ground Transportation

After being offloaded at the POLB, the dredged material would be used on site as fill by the POLB as part of its overall development strategy and program for handling its own sediments, or hauled to an approved recycling facility or one or more permitted landfills for disposal. For disposal at the POLB, PA1 would not result in any onshore transportation impacts.

Chapter 2 states that 45,000 cy of material would require approximately 2,000 truck trips, or approximately 167 trips per day for 13.5 days, from the POLB to an approved recycling facility or one or more permitted landfills (a distance of approximately 140 miles). Given the short-term duration of truck trips (approximately two weeks), the relatively small number of trips generated as a result of PA1 in relation to the existing vehicle volumes carried by the highways serving the POLB and the southern San Joaquin Valley, and the acceptable or better levels of service currently experienced by roadways accessing McKittrick, truck trips are expected to result in less than significant impacts to ground transportation.

MITIGATION MEASURES

None proposed.

3.7.4.2 Program Alternative 2 (PA2): Leveling and Spreading of Shell Mounds with Caissons Removal and Disposal

Impact – Vessel Transportation

Spreading of the shell mounds and removal of caisson debris would be accomplished with a clamshell dredge operated from a derrick barge. The barge would be moored near the center of each shell mound with a three- or four-point anchor system and would circumnavigate the perimeter of each mound during the spreading process. Large debris would be hauled to the surface and transported by barge for disposal. The clamshell dredging/spreading operation is estimated to require 3 to 4 days per mound, for a total of 12 to 16 days.

Final smoothing of the seafloor and removal of small debris would be conducted by trawling using a heavy-duty net. Debris captured in the net would be hauled to the surface and deposited on the aft deck of the vessel for subsequent disposal onshore. It is assumed that this debris would consist of relatively small volumes of concrete and metal rubble that would be off-loaded in port at the end of each day by the trawler and hauled to a permitted recycling facility by a licensed waste-disposal contractor. Trawling would systematically traverse each mound in a grid pattern until repeated passes resulted in no snags or further capture of debris. It is estimated that this final smoothing operation would require 2 to 3 days per mound, or 8 to 12 days total. A post-completion survey of sediment chemistry would be conducted to assess the extent of contamination remaining after the operation.

A single barge trip would be required to transport caisson debris from the Hazel site to the POLB, as compared to an estimated 13 trips for transport of shell mounds dredged material plus caisson debris under PA1. A single barge trip would not disrupt marine traffic. Therefore, PA2 would result in less than significant impacts on vessel transportation.

MITIGATION MEASURES

None proposed.

Impact – Ground Transportation

PA2 could require the truck transport of caisson debris from the POLB off-loading site to one or more permitted landfills or a recycling facility, and could result in similar impacts to those identified under PA1, although the volume of debris would be reduced. Accordingly, PA2 is not anticipated to impede roadway traffic flows and would result in less than significant impacts on ground transportation.

MITIGATION MEASURES

None proposed.

3.7.4.3 Program Alternative (PA3): Capping

Impact – Vessel Transportation

Cover material for capping the shell mounds would be transported to the site by barge and deposited through bottom dumping or a down-pipe. Assuming 6 or 4 percent slopes for each cap, between 611,505 and 1,432,386 cy of material, respectively, would be required to cover the four mounds. Between 284 and 664 barge trips would be required to transport cover material to the mound sites. Capping operations would take 166 days and 71 days for creation of 4 and 6 percent slopes, respectively. Hence, during the capping operation, four barge trips per day would be required, compared to approximately one barge trip per day for shell mounds removal. The most likely source of cover material is from POLA/POLB dredging projects.

Although there would be more barge trips generated under this Program Alternative compared to the 12 trips associated with shell mounds removal, impacts on marine traffic would nonetheless remain short-term and would not result in any delay of normal movements by commercial or military vessels. Therefore, capping the shell mounds would result in less than significant impacts on vessel transportation.

MITIGATION MEASURES

None proposed.

Impact – Ground Transportation

Transport and deposition of material for capping the shell mounds would occur entirely offshore and would have no impact on ground transportation.

MITIGATION MEASURES

None proposed.

3.7.4.4 Program Alternative 4 (PA4): Artificial Reefs at all Four Shell Mounds

Impact – Vessel Transportation

Modification of the shell mounds by construction of rock reefs around each mound would require barge transport of 10,000 to 15,000 tons of rock from a quarry on Santa Catalina Island. A 200-foot by 60-foot rock barge, which can transport approximately 2,200 tons, would be required to make up to seven round trips to transport all of the rock required for four rock reefs. A derrick barge of similar size would be used to place the rock around the shell mounds. In addition, one or two tugs (for towing the barges and placing anchors) and a diver-support boat would be required. Operations would be conducted during daylight hours, and rock placement would require approximately 4 days per shell mound site.

The number of barge trips required to transport rock from Santa Catalina would be less than the number required to transport dredged material from the shell mounds to the POLB (approximately 12 trips); the transport distance (approximately 90 nm) would be about the same. Thus, this Program Alternative would generate less barge traffic than would be generated by shell mound removal. Modification of the shell mounds, therefore, would have less than significant impacts on vessel transportation.

MITIGATION MEASURES

None proposed.

Impact – Ground Transportation

Activities associated with PA4 would occur entirely offshore and would have no impact on ground transportation. The rock quarry on Santa Catalina is adjacent to the coast so a barge would be able to onload the rock at the quarry, without the need to truck the rock from the quarry to the barge.

MITIGATION MEASURES

None proposed.

3.7.4.5 Program Alternative 5 (PA5): Artificial Reef at Hazel after Removing (5a) or Spreading (5b) Shell Mounds

Program Alternative 5a (PA5a): Artificial Reef at Hazel Site plus Removal and Disposal of Shell Mounds

Impact – Vessel and Ground Transportation

PA5a would result in vessel and ground transportation impacts similar to those identified for PA1 and PA4, although fewer barge trips (up to two) compared to PA4 would be necessary to transport rock for the reef from Santa Catalina Island to the former Platform Hazel site. Other vessel needs would remain unchanged (i.e., a derrick barge

for rock placement, two tugs for towing the rock barges and dropping anchors, and a diver-support vessel). Impacts to vessel and ground transportation would be less than significant.

MITIGATION MEASURES

None proposed.

Program Alternative 5b (PA5b): Artificial Reef at Hazel Site plus Leveling and Spreading Shell Mounds

Impact – Vessel and Ground Transportation

PA5b would result in vessel and ground transportation impacts similar to those identified for PA2 and PA4. As under PA5a, PA5b would require fewer barge trips for transport of rock to the Hazel site compared to PA4, and other vessel needs would remain unchanged. Impacts to vessel and ground transportation would be less than significant.

MITIGATION MEASURES

None proposed.

3.7.4.6 Program Alternative (PA) 6: Offsite Mitigation

Impact – Vessel and Ground Transportation

Under PA6, commercial fishermen would be supplied with Global Positioning System (GPS) navigational equipment to assist them in avoiding shell mound and Hazel caisson hazards while allowing nearby fishing, a beneficial impact on vessel transportation. PA6 would have no impact on ground transportation.

MITIGATION MEASURES

None proposed.

3.7.4.7 No Project Alternative

Impact – Vessel and Ground Transportation

The No Project Alternative would generate no new vessel or truck traffic and, therefore, would have no impact on vessel and ground transportation.

MITIGATION MEASURES

None proposed.